

AMENDMENT TO THE CLAIMS

Please **CANCEL** claims 24-36.

A copy of all pending claims and a status of the claims is provided below.

Claim 1. (Original) A method for manufacturing a device including an n-type device and a p-type device, comprising:

- doping a portion of a semiconductor substrate;
- forming a gap in the semiconductor substrate by removing at least a portion of the doped portion of the semiconductor substrate; and
- growing a strain layer in at least a portion of the gap in the semiconductor substrate.

Claim 2. (Original) The method of claim 1, wherein the strain layer is grown on at least a portion which is substantially directly under a channel of the n-type device.

Claim 3. (Original) The method of claim 1, wherein the strain layer is grown on at least a portion which is substantially directly under at least one of a source region or drain region of the p-type device.

Claim 4. (Original) The method of claim 3, wherein the strain layer is not grown under a channel of the p-type device.

Claim 5. (Original) The method of claim 1, further comprising/depositing a patterned photo-resist layer on a semiconductor substrate, wherein the step of depositing comprises:

depositing a photo-resist layer which covers a portion of the semiconductor substrate which is to be under a channel of the p-type device.

Claim 6. (Original) The method of claim 5, wherein the photo-resist layer exposes a portion of the semiconductor substrate which is to be under a channel of the n-type device.

Claim 7. (Original) The method of claim 1, wherein the gap is a tunnel formed under the channel of an n-type device.

Claim 8. (Original) The method of claim 1, further comprising removing the deposited patterned photo-resist layer.

Claim 9. (Original) The method of claim 8, further comprising depositing a mask on the semiconductor substrate.

Claim 10. (Original) The method of claim 9, further comprising patterning the deposited mask such that a portion of the semiconductor substrate is covered and a portion of the semiconductor substrate is exposed.

Claim 11. (Original) The method of claim 10, wherein the step of forming a gap comprises etching the exposed portion of the semiconductor substrate to selectively expose a side-wall of at least a portion of the doped region of the semiconductor substrate.

Claim 12. (Original) The method of claim 11, further comprising depositing a spacer material over the semiconductor substrate.

Claim 13. (Original) The method of claim 12, wherein the depositing of the spacer material includes depositing the spacer material on exposed portions of the gap.

Claim 14. (Original) The method of claim 13, further comprising filling unexposed portions of the gap with oxide material.

Claim 15. (Original) The method of claim 1, wherein the step of doping comprises doping the semiconductor substrate with Ge.

Claim 16. (Original) The method of claim 15, wherein the doping concentration of the Ge is about 1×10^{14} Ge/cm² to about 1×10^{16} Ge/cm².

Claim 17. (Original) The method of claim 1, wherein the step of doping comprises doping the semiconductor substrate with at least one of As, B, In, and Sb.

Claim 18. (Original) The method of claim 1, wherein the step of growing a strain layer comprises growing at least one of SiGe, Si₃N₄, SiO₂ and SiO_xN_y in at least a portion of the gap in the semiconductor substrate.

Claim 19. (Original) A method for manufacturing a device including an n-type device and a p-type device, comprising:

growing a strain layer on a semiconductor substrate;

growing a silicon layer above the strain layer;

forming a gap between the semiconductor substrate and the silicon layer by removing at least a portion of the silicon layer and the strain layer from above the semiconductor substrate; and

growing a strain layer in the gap.

Claim 20. (Original) The method of claim 19, wherein the strain layer is grown on at least a portion which is substantially directly under a channel of the n-type device.

Claim 21. (Original) The method of claim 19, wherein the strain layer is grown on at least a portion which is substantially directly under at least one of a source region or drain region of the p-type device.

Serial No.: 10/605,906
P27153.A01

--6--

Claim 22. (Original) The method of claim 19, wherein the strain layer is not grown under a channel of the p-type device.

Claim 23. (Original) The method of claim 19, wherein the step of growing a strain layer comprises growing at least one of SiGe, Si₃N₄, SiO₂ and SiO_xN_y on the semiconductor substrate.

Claims 24-36. (cancel)